

## Office Action Summary

Application No.

09/890,920

Applicant(s)

FOLEY, PETER ROBERT

Examiner

Preeti Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 11-26 are pending.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Specification***

3. The disclosure is objected to because of the following informalities:
  - a. Page 8, line 4, the sentence beginning with "When diols are present" is incomplete.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 12, 13, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "...said adjunct ingredients...". There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 13 and 17, the disclosure on page 16 recites, "Specifically, it is desirable that the present detergent compositions are free of chelants or builders for which the log<sub>10</sub> of the calcium binding constant (Log K) is greater than 3.0..." is contradictory to the limitation of claims 13 and 17 wherein the applicant's are claiming a process of **adding a chelant have a calcium binding constant greater than 3.**

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 11-13 and 15-24 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Boskamp (US 4,462,922).

Boskamp teaches the use of a mixture of a water-dispersible antioxidant and an organic, hydrophilic, water-soluble polyol having a molecular weight of less than about 500 as enzyme-stabilizing system in liquid detergent compositions. Preferably a buffering amount of a weak base, such as an alkanolamine, is also present in the enzymatic liquid detergent composition. It has now been found that a mixture of a polyol and/or a polyfunctional amino compound, with boric acid or an alkalimetalborate and with an antioxidant produces a synergistic enzyme-stabilizing effect, that is an effect which surmounts the sum-effect of each of the binary systems. It has been found that in the mixture of the invention the antioxidant must be present above a certain level, as well as the boric acid or the alkalimetalborate. The antioxidant should be present in the mixture in an amount of at least 5% by weight of the final enzymatic aqueous liquid detergent composition. See abstract and col.1, ln.2-40.

Boskamp teaches the utility of amylases in detergent compositions and teaches that bacterial or fungal enzymes are preferred, such as bacterial amylases and proteases, and fungal cellulases. Although the liquid compositions of the present invention may have a near-neutral pH value, the present invention is of particular benefit for enzymatic liquid detergents with a pH of 7.5 or above. See col.2, ln.65-70. Specifically regarding claim 26, Boskamp teaches the utility of cellulases and proteases and that the enzymes can be incorporated in any suitable form, e.g. as a granulate

(marumes, prills etc.), or as a liquid concentrate. The granulate form has often advantages. The amount of enzymes present in the liquid composition may vary from 0.001 to 10% by weight, and preferably from 0.01 to 5% by weight. See col.3, ln.10-35.

Specifically regarding claims 12 and 16, Boskamp teaches that the liquid detergent compositions comprise as an essential ingredient an active detergent material, which may be an alkali metal or alkanol amine soap or a C10 -C24 fatty acid, including polymerized fatty acids, or an anionic, nonionic, cationic, zwitterionic or amphoteric synthetic detergent material, or mixtures of any of these. Examples of nonionic synthetic detergents are the condensation products of ethylene oxide, propylene oxide and/or butyleneoxide with C8-C18 alkylphenols, C8 -C18 primary or secondary aliphatic alcohols, C8 -C18 fatty acid amides; further examples of nonionics include tertiary amine oxides with one C8 -C18 alkyl chain and two C1-3 alkyl chains. The above reference also describes further examples of nonionics. The average number of moles of ethylene oxide and/or propylene oxide present in the above nonionics varies from 1-30; mixtures of various nonionics, including mixtures of nonionics with a lower and a higher degree of alkoxylation, may also be used. Examples of cationic detergents are the quaternary ammonium compounds such as alkyldimethylammonium halogenides, but such cationics are less preferred for inclusion in enzymatic detergent compositions. Examples of amphoteric or zwitterionic detergents are N-alkylamino acids, sulfobetaines, condensation products of fatty acids with protein hydrolysates, but owing to their relatively high costs they are usually used in combination with an anionic or a nonionic detergent. Mixtures of the various types of

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active detergents may also be used, and preference is given to mixtures of an anionic and a nonionic detergent active. See col.3, ln.35-col.4, ln.25.

Specifically regarding claims 20-23, Boskamp teaches that a mixture of a polyol and/or a polyfunctional amino compound, with an antioxidant produces a synergistic enzyme-stabilizing effect. The polyols that can be used in the present invention are polyols containing from 2 to 6 hydroxyl groups. They contain only C, H, and O atoms. Typical examples are ethyleneglycol, propyleneglycol, 1,2 propanediol, butyleneglycol, hexyleneglycol, glycerol, mannitol, sorbitol erythritol, glucose, fructose, lactose and erythritan (=1,4-anhydride of erythritol). Preferably glycerol is used. In general, the amount of polyol used ranges from 2 to 25%, preferably from 5 to 15% by weight of the final composition. The polyfunctional amino compounds that can be used in the present invention contain at least one amine grouping and at least two hydroxylgroups. Suitable examples are diethanolamine, triethanolamine, di-isopropanolamine, tri-isopropanolamine, and tris(hydroxymethyl) aminomethane. In general, the amount of polyfunctional amino compound used ranges from 2 to 25 by weight of the final composition.

Boskamp teaches that the liquid compositions may further contain up to 60% of a suitable builder, such as sodium, potassium and ammonium or substituted ammonium pyro- and tripolyphosphates, -ethylenediamine tetraacetates, -nitrilotriacetates, - etherpolycarboxylates, -citrate, -carbonates, -orthophosphates, zeolites, carboxymethyloxysuccinate, etc. Particularly preferred are the polyphosphate builder salts, nitrilotriacetates, citrates, zeolites, and mixtures thereof. In general the builders

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are present in an amount of 1-60, preferably 5-50% by weight of the final composition. The amount of water present in the detergent compositions of the invention varies from 5 to 70% by weight. Other conventional materials may also be present in the liquid detergent compositions of the invention, for example soil-suspending agents, hydrotropes, corrosion inhibitors, dyes, perfumes, silicates, optical brighteners, suds depressants such as silicones, germicides, anti-tarnishing agents, opacifiers, fabric softening agents, oxygen-liberating bleaches such as hydrogen peroxide, sodium perborate or percarbonate, disperisophthalic anhydride, with or without bleach precursors, buffers and the like. See col.4, ln.25-65.

Accordingly, the teachings of Boskamp are sufficient to anticipate the material limitations of the instant claims.

Alternatively, even if the broad teachings of Boskamp are not sufficient to anticipate the material limitations of the instant claims, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made to formulate a liquid dishwashing detergent composition wherein the final composition comprises substantially no residual hydrogen peroxide with a reasonable expectation of success and similar results, because Boskamp suggests a enzymatic liquid detergent composition comprising an amine oxide, an antioxidant, a chelant, surfactant, and the other requisite limitations of the instant claims and further, one of ordinary skill in the art would have been motivated to modify the percentages of said adjunct ingredients since Boskamp teaches varying amounts of active detergent material.

10. Claims 11-13 and 15-24 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Vinson et al. (US 6,069,122).

Vinson et al. teach a liquid dishwashing detergent comprising one or more deterative adjuncts selected from the following: soil release polymers, dispersants, polysaccharides, abrasives, bactericides, tarnish inhibitors, builders, enzymes, dyes, buffers, antifungal or mildew control agents, insect repellents, perfumes, hydrotropes, thickeners, processing aids, suds boosters, brighteners, anti-corrosive aids, stabilizers antioxidants and chelants. Moreover, the hand dishwashing detergent composition of this invention can further comprise enzymes preferably selected from the group consisting of protease, lipase, amylase, cellulase, and mixtures thereof; more preferably the enzymes are selected from protease and amylase.

Additionally, that the amine oxide or surfactant should be hydrogen peroxide-free. The preferred level of hydrogen peroxide in the amine oxide or surfactant paste of amine oxide is 0-40 ppm, more preferably 0-15 ppm. Making the compositions free of hydrogen peroxide is important when the compositions contain an enzyme. The peroxide can react with the enzyme and destroy any performance benefits the enzyme adds to the composition. However, the diamine can react with any peroxide present and act as an enzyme stabilizer and prevent the hydrogen peroxide from reacting with the enzyme. Having the diamine act as an enzyme stabilizer also prevents the diamine from providing the benefits to the composition for which it was originally put in to perform, namely, grease cleaning, sudsing, dissolution and low temperature stability. The use of stabilizers such as antioxidants and chelants inhibit and/or prevent the formation of



H<sub>2</sub>O<sub>2</sub> impurities in the composition from the time of preparation to ultimate use by the consumer and beyond. See col.3, ln.35-col.4,ln.35.

Specifically regarding claims 12 and 16, Vinson et al. teach that the nonionic surfactants are selected from the group consisting of amine oxide, alkyl dialkyl amine oxide, alkyl ethoxylate, alkanoyl glucose amide, the so-called narrow peaked alkyl ethoxylates, C<sub>6</sub>-C<sub>12</sub> alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), alkanoyl glucose amide, and mixtures thereof. See col9, ln. 50-60If a mixture of anionic surfactant and nonionic surfactant is used, the weight ratio of anionic:nonionic is preferably from about 50:1 to about 1:50, more preferably from about 50:1 to about 3:1. Also, when mixtures of anionic and nonionic surfactants are present, the hand dishwashing detergent composition herein preferably further comprise protease enzyme, amylase enzyme, or mixtures thereof. See col.3,ln.5-20.

Specifically regarding claims 19-23, Vinson et al. teach dishwashing compositions are subjected to acidic stresses created by food soils when put to use, i.e., diluted and applied to soiled dishes. If a composition with a pH greater than 7 is to be more effective, it preferably should contain a buffering agent capable of providing a generally more alkaline pH in the composition and in dilute solutions, i.e., about 0.1% to 0.4% by weight aqueous solution, of the composition. The buffering agent may be an active detergent in its own right, or it may be a low molecular weight, organic or inorganic material that is used in this composition solely for maintaining an alkaline pH. Preferred buffering agents are nitrogen-containing buffering agents such as Tri(hydroxymethyl)amino methane (HOCH<sub>2</sub>)<sub>3</sub> CNH<sub>3</sub> (TRIS), 2-amino-2-ethyl-1,3-

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propanediol, 2-amino-2-methyl-propanol, 2-amino-2-methyl- 1,3 -propanol, disodium glutamate, N-methyl diethanolamide, 1,3-diamino-propanol N,N'-tetra-methyl-1,3-diamino-2-propanol, N,N-bis(2-hydroxyethyl)glycine (bicine) and N-tris (hydroxymethyl)methyl glycine (tricine). Useful inorganic buffers/alkalinity sources include the alkali metal carbonates and alkali metal phosphates, e.g., sodium carbonate, sodium polyphosphate. The buffering agent, if used, is present in the compositions of the invention herein at a level of from about 0.1% to 15%, preferably from about 1% to 10%, most preferably from about 2% to 8%, by weight of the composition. See col.26, ln.10-55.

Vinson et al. teach by example, the components of the instant claims in the specific proportions, in example II in col.29. Accordingly, the teachings of Vinson et al. appear to anticipate the material limitations of the instant claims.

### ***Allowable Subject Matter***

11. Claims 14 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note that the prior art of record do not specifically teach an N-oxide surfactant having the specific formula recited in the instant claims.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Preeti Kumar whose telephone number is 703-305-0178. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 703-308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-872-9309.

PK  
August 26, 2002

Preeti Kumar  
Examiner  
Art Unit 1751

  
YOGENDRA N. GUPTA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700